

**WIRELESS ACCESS SYSTEM AND ASSOCIATED METHOD USING
MULTIPLE MODULATION FORMATS IN TDD FRAMES
ACCORDING TO SUBSCRIBER SERVICE TYPE**

ABSTRACT OF THE DISCLOSURE

5 There is disclosed a radio frequency (RF) modem shelf for use

in a fixed wireless access network comprising a plurality of base stations capable of bidirectional time division duplex (TDD) communication with wireless access devices disposed at a plurality

10 of subscriber premises. The radio frequency (RF) modem shelf comprises: 1) a first RF modem capable of communicating with a plurality of the wireless access devices using TDD frames, each TDD frame having an uplink for receiving data and a downlink for transmitting data; and 2) a modulation controller associated with

15 the RF modem shelf capable of determining an optimum modulation configuration for each of the plurality of wireless access devices communicating with the first RF modem, wherein the modulation controller causes the first RF modem to transmit first downlink data to a first wireless access device in a first data block having a first optimum modulation configuration and to transmit second

20 downlink data to the first wireless access device in a second data block having a different second optimum modulation configuration.